

DAM REVIEW COMMITTEE
NOVEMBER 21, 2006

PRESENT: Crawford, Mehigh, Sanderson, Sarrazin, Sawyer, Williams.

ABSENT: Burwell, Lulham.

GUESTS: Shawn Middleton, Spicer Group; Steve Corey, Mayor; Chuck Spring, Councilperson; Cheryll Warren, The Argus Press; and other concerned citizens.

The meeting was called to order by Chairperson Mehigh, at 7:00 p.m., in Corunna City Hall Council Chambers

Shawn Middleton, from Spicer Group, introduced himself and explained that he was filling in for Peter Chapman, who has worked on this project from the start. Chapman had heart surgery recently and was unable to attend the meeting.

Middleton explained that there were several options that would work for our dam, went through each of them, and explained the pros and cons. He felt that removing the dam, and not rebuilding, was not a viable option because of the loss to the community and sediment issues.

Riffle and Pool Stepped System: Uses stones and steel sheeting in the construction of a series of small dams spread out over 100-200 yards with 2-3 foot waterfalls. These would be built above and below the existing dam. The majority of the existing dam would be left in place, but dropped down in height. This dam would look like natural, stepped pools at low water and look like rapids at high water. This construction maintains the water level behind the dam, keeps the recreation area, allows fish to pass, looks natural, and is stable for 50+ years. There also may be grant money available for this construction. However, the resulting dam would be much longer than the current dam and there is a potential for fill needed downstream. Ex: Mt. Pleasant, Michigan.

Rosgen-Cross Vane & "W" Weir: Uses boulders and stone in the construction and would be built above the existing dam. Steel sheeting may also be needed to control the water. The current dam would be removed. Large stones, or Weir, would then be placed above where the current dam now sits. The Weir help channel the water flow away from the downstream banks. Boulders or rocks are then placed downstream of the stones forming either a "V" or a "W" shape, depending on the needed engineering. The water flow, over these rocks, would look like rapids. This dam might maintain the water level behind the dam, but will be difficult to accomplish without added measures such as a stair-step addition. There is potential for a recreational area, allows fish to pass, and looks nice. It is also very good for bank stabilization downstream. The cons are that our river, because of its width, may need multiple Weir sections to account for the large river head, the construction may not be stable in the long term, and will require very large boulders and/or stacked stones. It also will not help stabilize the west bank above the dam. Ex: Dimondale, Michigan.

Conventional Concrete: Uses concrete reinforced with steel bars. It would be placed at or near the current dam. The old dam would be lowered and might be used as a cofferdam, or temporary dam, during construction. A concrete dam is cast in place and can be shaped into any form. It will maintain the river level upstream and is a durable and stable type of construction. It is also a good foundation for a footbridge. The negatives are that it is costly, especially the concrete and steel, and may have possible delays in construction because of rain and high water levels.

Roller Compacted Concrete (RCC): Uses a dry mix concrete either mixed on site or trucked in. The RCC dam is a stair-stepped dam and each stair is installed similar to the way a road is constructed. The concrete mix is placed in forms and then compacted in place. The existing dam can be utilized as a cofferdam, during construction, and used as a part of the new dam or removed after construction. One side of the RCC dam would be installed, as the river is diverted to the other side. Then the river would be diverted over the new part and the other half of the dam would be installed. If desired, an RCC can be hybrid with a Weir dam. An RCC dam is quick to construct, costs less, gives the river a cascading effect as it goes over the steps, controls the river's energy, flexible in design, reduces bank erosion, can accommodate a fish ladder and footbridge, has less potential for cracking, and is very strong. The problems with an RCC are that the dam has a rough finish, but that can be smoothed out with a facing system or formed edges; lower shear and tensile strength; steps can break and chip; and there may be the need for a concrete base if soil is not good for compacting. Ex: Mistequay Dam.

A consideration in design is whether to allow for fish passage. The Corunna dam has always been between the Chesaning and Shiatown dams. If the Chesaning dam is changed to allow fish to migrate through it, our dam will now be the stopping point for lamprey eel migration upstream. An RCC dam has ways of allowing fish to migrate up river, but stop lamprey eels.

The current, preliminary, estimated cost for a RCC dam replacement would run approximately \$1.1 million. This cost includes a facing system, but not a footbridge or any other park improvements.

Middleton said that there might be grants available for additions to the dam like a footbridge over the top, sidewalk and parking improvements, or an overlook. Funding can come from park and recreation grants, possible legislation for grants and low cost funding from state dam safety officials, and state and private fish/wildlife organizations if fish passage is improved.

Sarrazin asked if there was some way the dam could be repaired as a community project. He felt that driving sheet metal behind the dam and then backfilling with concrete might be all that is needed. It might not fix it permanently, but would fix it for a few more years. Middleton said that repairing the dam was an option and should be looked into. However, he was unsure as to the insurance risks and MIOSHA involvement if unskilled residents were used as labor in a hazardous situation. Workers would have to be state approved.

Middleton was thanked for his presentation by Sawyer.

Meeting was adjourned at 8:35 p.m.

Don Mehig, Chairperson